THE INVENTOR CLAIMS:

ADD 53-89

1. An accommodating intraocular lens to be implanted in a human eye within a natural capsular bag in the eye attached about its perimeter to the ciliary muscle of the eye and having a certain inner diameter when the ciliary muscle is in its relaxed state, the bag including an elastic posterior capsule which is urged anteriorly by vitreous pressure in the eye and an anterior capsule opening bounded by an anterior capsular remnant that fuses to the posterior capsule by fibrosis during a postoperative fibrosis period in which said bag and remnant shrink, and said remnant being tautly stretched by relaxation of the ciliary muscle and relaxed by contraction of the ciliary muscle after fibrosis is complete, said intraocular lens comprising:

a lens body having normally anterior and posterior sides and including an optic and haptics having inner ends joined to diametrically opposite sides of said optic and opposite outer ends, and said haptics being movable anteriorly and posteriorly relative to said optic and through a certain position wherein said lens has a length approximating said inner diameter of said capsular bag, and wherein

said lens is adapted to be implanted in said bag while said ciliary muscle is in its relaxed state and in an implanted position wherein (a) said haptics are in said certain position relative to said optic and situated between said remnant and said posterior capsule, whereby fibrosis will occur about the haptics,

(b) said optic is aligned with said anterior capsule opening, and

(c) shrinking of said bag and remnant during fibrosis will exert endwise compression and posterior forces on the lens and haptics, respectively, and

said optic is deflected posteriorly relative to the outer ends of said haptics with resultant anterior deflection of said haptics relative to said optic by endwise compression and posterior forces applied to said lens and haptics, respectively, when said haptics are in said certain position relative to the optic, whereby when said lens is implanted in said bag, relaxation of the ciliary muscle after completion of fibrosis effects posterior deflection of the implanted lens against the posterior capsule of the bag by the taut remnant, and contraction of the ciliary muscle effects anterior accommodation of the implanted lens by the posterior capsule, vitreous pressure, and endwise compression of the lens.

2. An accommodating intraocular lens comprising:

a lens body having normally anterior and posterior sides and including an optic, haptics extending from diametrically opposite sides of said optic and having inner ends adjacent said optic and opposite outer ends, and hinge means pivotally joining said inner haptic ends to said optic for pivotal movement of said haptics about said hinge means anteriorly and posteriorly relative to said optic.

3. An accommodating intraocular lens according to Claim 2, wherein:

said hinge means comprise flexible hinge portions of said lens body.

4. An accommodating intraocular lens according to Claim 3, wherein:

said hinge portions comprise flexible reduced portions of said lens body.

5. An accommodating intraocular lens to be implanted in a human eye within a capsular bag in the eye having a posterior capsule, and an anterior capsular remnant bounded by an anterior capsular remnant, said lens comprising:

a lens body having normally anterior and posterior sides and including an optic and haptics having inner ends joined to diametrically opposite sides of said optic and opposite outer ends, and said haptics being movable anteriorly and posteriorly relative to said optic, and

fixation means on said haptics for at least one of the following purposes: (a) positioning the lens in the capsular bag, (b) effecting fixation of the outer haptic ends in the bag by fibrosis.

6. An accommodating intraocular lens according to Claim 5, wherein:

said fixation means comprise loops at the outer ends of the haptics about which fibrosis can occur.

7. An accommodating intraocular lens according to Claim 5, wherein:

said fixation means comprise springs at the outer ends of said haptics having normal unstressed positions wherein said springs extend beyond their adjacent outer haptic ends in the endwise directions of the haptics for resilient engagement with the perimeter of said bag to firmly position the lens in the bag during fibrosis and prevent dislocation of the lens in the bag if said capsular remnant is torn, slit, or otherwise ruptured during surgery or fibrosis.

8. An accommodating intraocular lens comprising:

a lens body having normally anterior and posterior sides and including an optic, and haptics having inner ends joined to diametrically opposite sides of the optic and opposite outer ends, and

grooves at one of said body sides extending across said inner haptic ends transverse to the length of the lens and forming hinges about which said haptics are flexible anteriorly and posteriorly relative to said optic.

9. An accommodating lens according to Claim 8, wherein:

said grooves are located at said anterior side of the body.

10. An intraocular lens to be supported in the capsular bag of the eye of the user in which a capsulorhexis procedure has been performed, said intraocular lens having a posterior surface configured to engage the posterior wall of the capsular bag when the lens is in place, and said intraocular lens including a central optical region and two opposing plate-like flexible haptic members attached to said optical region and extending radially outwardly therefrom, said haptic members being configured and dimensioned to engage the remaining fibrosed circular anterior capsular rim and the posterior capsule to form pockets therein, so that after implantation the intraocular lens is displaced posteriorly by the fibrosed rim to force the intraocular lens against the posterior wall of the capsular bag and to stretch the wall in the posterior direction, whereby contraction of the ciliary muscle of the eye during accommodation relaxes the rim and allows the stretched elastic posteriorly displaced posterior wall of the capsular bag to contract and the haptic members to flex and thus move the intraocular lens in the anterior direction.

11. The intraocular lens defined in Claim 10, and which includes a spring loop mounted on each of said haptic members in position to be lodged in the sulcus to pull the intraocular lens anteriorly during accommodation.

12. The intraocular lens defined in Claim 10, in which the posterior surface of the optical region is convex to be pressed against the posterior wall of the capsule with the intraocular lens implanted in the eye of the user.

13. An accommodating intraocular lens comprising:

a lens body having normally anterior and posterior sides and including a round optic, and plate haptics having inner ends joined to diametrically opposite edge portions of said optic at junctions between said optic and said haptics and opposite outer ends, and wherein

the width of said junctions measured transverse to the length of said lens is substantially less than the diameter of said optic, whereby said optic has free edge portions of substantial circumferential length between said junctions,

the circumferential length of each free edge portion substantially exceeds the width of each junction, and

said haptics are movable anteriorly and posteriorly relative to said optic.

14. An accommodating intraocular lens according to Claim 13, wherein:

said haptics have outer end portions which are relatively wide compared to the width of said junctions and contain openings adjacent the outer ends of the haptics.

15. An accommodating intraocular lens according to Claim 13, wherein:

said junctions are hinge junctions about which said haptics are movable anteriorly and posteriorly relative to said optic,

said haptics have outer end portions which are relatively wide compared to the width of said junctions and contain openings in the form of cutouts having open sides which open through the outer ends of the haptics,

said lens includes spring arms at the outer ends of said haptics which are fixed at one end to the outer ends of the haptics at one side of said cutouts and extend laterally of the haptics across the open sides of said cutouts in spaced relation to the adjacent haptic ends, and

said spring arms are resiliently flexible toward and away from the adjacent haptic ends.

16. An accommodating intraocular lens according to Claim 13, wherein:

said junctions are hinge junctions about which said haptics are movable anteriorly and posteriorly relative to said optic,

said haptics have outer end portions which are relatively wide compared to the width of said junctions and contain openings adjacent the outer ends of the haptics, and relatively slender bridge portions extending across the outer ends of the haptics along the adjacent sides of said haptic openings,

said lens includes spring arms at the outer ends of said haptics which are fixed at one end to the outer ends of the haptics adjacent one longitudinal edge of the haptics and extend laterally of the haptics toward their opposite longitudinal edges in spaced relation to said bridge portions endwise of the haptics, and

said spring arms are resiliently flexible toward and away from said bridge portions endwise of the lens.

17. An accommodating intraocular lens according to Claim 14, wherein:

said haptics have inner end portions, and

said junctions are hinge junctions about which said haptics are pivotally movable anteriorly and posteriorly relative to said optic and which constitute virtually the entire length of said inner end portions.

18. An accommodating intraocular lens according to Claim 14, wherein:

said optic and haptics have normally anterior and posterior surfaces,

said junctions are flexible hinge junctions comprising flexible hinge portions joining said optic edge portions and said inner haptic ends, and

said optic is offset anteriorly relative to said haptics in such a way that said anterior optic surface projects forwardly of said anterior haptic surfaces, and said both said haptic edge portions and said flexible hinge portions are situated forwardly of said anterior haptic surfaces.

19. A method of implanting an intraocular lens within a capsular bag of a patient's eye, said bag being attached about its perimeter to the ciliary muscle of the eye and including an elastic posterior capsule urged anteriorly by vitreous pressure in the eye, and an anterior capsular opening bounded by a capsular remnant which fuses to the posterior capsule by fibrosis during a postoperative fibrosis period, and wherein said ciliary muscle has a distant vision relaxed state and a near vision contracted state, and said vitreous pressure is reduced and said bag and remnant are stretched by relaxation of said muscle, and said vitreous pressure is increased and said bag and remnant are relaxed by contraction of said muscle, said method comprising the steps of:

selecting an intraocular lens having normally anterior and posterior sides and including a central optic, and haptics having inner ends joined to said optic and opposite outer ends movable anteriorly and posteriorly relative to said optic,

implanting the selected intraocular lens within said capsular bag in a manner such that said haptics are situated between said capsular remnant and the outer perimeter of said posterior capsule, said optic is aligned with said anterior capsular opening, and

permitting fibrosis to occur about said haptics while said ciliary muscle is in its relaxed state in such a way as to form haptic pockets in the fibrose tissue and urge said optic posteriorly against said posterior capsule, whereby relaxation of the ciliary

muscle after fibrosis is complete cause posterior movement of said optic against said posterior capsule by said capsular remnant, and contraction of the ciliary muscle causes anterior accommodation movement of the optic by said posterior capsule, vitreous pressure, and endwise compression of the lens.

20. The method of Claim 19 including the additional step of:

paralyzing the ciliary muscle in its relaxed state with a cycloplegic when implanting the lens in said bag and maintaining the muscle in said relaxed state with a cycloplegic until fibrosis is complete to effect proper formation of said haptic pockets and prevent dislocation of the lens by contraction of the ciliary muscle during fibrosis.

21. The method of Claim 20, wherein:

said capsular bag and remnant shrink during fibrosis in a manner which causes endwise compression of the lens and posterior movement of said optic to a distant vision position wherein said optic presses rearwardly against said posterior capsule and stretches the posterior capsule rearwardly to produce an anterior elastic bias force on the lens,

relaxation of the ciliary muscle after fibrosis is complete reduces said vitreous pressure and stretches said capsular remnant to effect posterior movement of said optic to said distant vision position by the capsular remnant, and

contraction of the ciliary muscle after fibrosis is complete compresses the lens endwise to cause anterior accommodation movement of said optic by said bias force, vitreous pressure, and anterior buckling of the lens.

22. A method according to Claim 19, wherein:

said haptics are plate haptics, and

said lens includes fixation elements at the outer ends of and separable from said haptics and around which fibrosis occurs to permanently fixate said elements in said bag, and

said haptics are separable from said fixation elements, whereby said fixation elements position said lens in said bag, and said lens is separable from said fixation elements to permit removal of said lens from and replacement of the lens in said bag.

23. A method according to Claim 19, wherein:

said anterior capsule opening is a generally circular opening formed by anterior capsulorhexis of the natural lens of the eye, and said capsular remnant is an annular capsular rim circumferentially surrounding said anterior capsule opening.

24. A method of implanting an intraocular lens within a patient's eye having a natural lens containing a natural lens matrix and including an elastic posterior capsule urged anteriorly by vitreous pressure in the eye, and an anterior capsule, said method comprising the steps of:

performing a capsulotomy on said anterior capsule to form an opening in said anterior capsule bounded by a remnant of the anterior capsule, and removing the natural lens matrix from the natural lens through said anterior capsule opening to provide a capsular bag attached about its perimeter to the ciliary muscle of the eye and including said elastic posterior capsule and said anterior capsule remnant

selecting an intraocular lens having normally anterior and posterior sides, a central optic, and haptics having inner ends joined to said optic and opposite outer ends movable anteriorly and posteriorly relative to said optic,

implanting the intraocular lens within said capsular bag while said ciliary muscle is in its relaxed state and in a position wherein said haptics are situated between said remnant and said posterior capsule, and said optic is aligned with said anterior capsule opening, and

allowing fusion of said remnant to said posterior capsule by fibrosis while said ciliary muscle is in its relaxed state, whereby (a) fibrosis occurs about said haptics to form haptic pockets in the fibrose tissue, (b) said optic is urged posteriorly against said posterior capsule by shrinking of said bag and remnant during fibrosis, (c) relaxation of the ciliary muscle after fibrosis is complete causes posterior movement of said optic against said posterior capsule by said remnant, and contraction of the ciliary muscle causes anterior accommodation movement of the optic by said posterior capsule, vitreous pressure, and endwise compression of the intraocular lens.

25. A method according to Claim 24 including the additional step of:

paralyzing the ciliary muscle in its relaxed state with a cycloplegic when implanting the intraocular lens in said bag and maintaining the muscle in said relaxed state with a cycloplegic until fibrosis is complete to effect proper formation of said haptic pockets and prevent dislocation of the intraocular lens by contraction of the ciliary muscle during fibrosis.

26. The method of Claim 25, wherein:

said bag and remnant shrink during fibrosis in a manner which causes endwise compression of the intraocular lens and posterior movement of said optic to a distant vision position wherein said optic presses rearwardly against said posterior capsule and stretches the posterior capsule rearwardly to produce an anterior elastic bias force on the intraocular lens.

27. A method according to Claim 19, wherein:

the optic of said intraocular lens is larger than said anterior capsule opening, and

said method includes the additional step of cutting said capsular remnant about said opening after completion of fibrosis in such a way as to permit free movement of said optic into and from the opening during accommodation.

28. An accommodating intraocular lens implant within a human eye having a natural capsular bag attached about its perimeter to the ciliary muscle of the eye and from which the natural lens matrix has been removed, the bag including an elastic posterior capsule urged anteriorly by vitreous pressure and an anterior capsule opening circumferentially surrounded by a capsular remnant fused by fibrose tissue to the posterior capsule, said lens implant comprising:

an intraocular lens having normally anterior and posterior sides and including a central optic, and haptics extending from opposite edges of the optic and having inner ends joined to the optic and opposite outer ends movable anteriorly and posteriorly relative to said optic, and wherein

said intraocular lens is situated within said capsular bag in a position wherein said optic is aligned with said anterior opening and the outer ends of said haptics are disposed between said remnant and said posterior capsule and confined within pockets in the fibrose tissue in a manner such that relaxation of the ciliary muscle effects posterior deflection of the lens and constriction of the ciliary muscle effects anterior accommodation of the lens.

29. An intraocular implant according to Claim 28, wherein:

relaxation of the ciliary muscle reduces vitreous pressure and stretches said remnant to a relatively taut condition to effect posterior deflection of said lens by the remnant to a distant vision position wherein said lens presses against said posterior capsule and stretches the posterior capsule rearwardly to produce a forward elastic bias force on said lens, and contraction of the ciliary muscle relaxes the capsular remnant and increases vitreous pressure to effect anterior accommodation of the lens by said bias force and vitreous pressure.

30. A lens implant according to Claim 28, wherein:

said lens includes fixation means at the outer ends of said haptics which are firmly anchored in said fibrose tissue to positively prevent dislocation of the lens in said capsular bag.

31. An accommodating intraocular lens to be surgically implanted within a natural ocular capsular bag including an elastic posterior capsule urged anteriorly by vitreous pressure and an anterior capsule opening bounded by an anterior capsule rim which fuses by fibrosis to the posterior capsule during a post-operative healing period following surgery with the ciliary muscle paralyzed in its relaxed state, said lens comprising:

a lens body having normally anterior and posterior sides, a central optic having an optic axis, and a plurality of extended portions extending generally radially out from the optic, each extended portion having an inner end connected to the optic and an outer end remote from said inner end movable anteriorly and posteriorly relative to said inner end,

said lens adapted for insertion through said anterior capsule opening to an implanted position within said bag in which said extended portions are situated between said rim and posterior capsule for fixation of the lens in the bag and posterior deflection of the lens against said posterior capsule by fibrosis of said rim to said posterior capsule during said healing period, and said extended portions adapted for rearward deflection of said optic upon ciliary muscle relaxation to a posterior distant vision position in which the lens has a posterior distant vision configuration and for forward deflection of said optic upon ciliary muscle contraction to a near vision position, resulting in consistent accommodation of the implanted lens with said contraction and relaxation of the ciliary muscle, and wherein

the outer ends of said extended portions are located approximately in a common tip plane normal to said optical axis when said lens has said posterior rear vision configuration, and

the inner ends of said extended portions are located in certain positions relative to said plane when said lens has said posterior distant vision configuration, and said certain positions are within the range of positions between and including posterior positions in which the inner ends of said extended portions are located rearwardly of said plane and anterior positions in which said inner ends are located forwardly of said plane, and

said extended portions adapted to deflect said optic rearwardly upon radial compression of said lens by inwardly directed forces exerted on the outer ends of said extended portions when said inner ends of said extended portions are located rearwardly of said plane, and said extended portions adapted to deflect said optic forwardly upon radial compression of said lens by inwardly directed forces exerted on the outer ends of said extended portions when said inner ends of said extended portions are located forwardly of said plane.

32. An accommodating intraocular lens according to Claim 31, wherein:

said lens includes hinges at the inner ends of said extended portions pivotally joining said extended portions to said optic for anterior and posterior pivotal movement of said extended portions at said hinges relative to said optic,

said hinges occupy posterior positions located rearwardly of said plane when the inner ends of said extended portions are located rearwardly of said plane, and said hinges occupy anterior positions forwardly of said plane when the inner ends of said extended portions are located forwardly of said plane, and

inwardly directed forces exerted on the outer ends of said extended portions when said hinges are located rearwardly of said plane urge said optic rearwardly, and inwardly directed forces exerted on said extended portions urge said optic forwardly when said hinges are located forwardly of said plane.

33. An accommodating intraocular lens according to Claim 32, wherein:

said hinges are located rearwardly of said plane when said lens has said posterior distant vision configuration.

34. An accommodating intraocular lens according to Claim 32, wherein:

said hinges are located forwardly of said plane when said lens has said posterior distant vision configuration.

35. An accommodating intraocular lens according to Claim 31, wherein:

each extended portion comprises a T-shaped plate haptic including a plate portion having an inner end connected to said optic, an opposite outer end, and longitudinal edges, and flexible fixation fingers at the outer end of said plate portion extending laterally out from the edges of said plate portion.

36. An accommodating intraocular lens comprising:

a lens body having normally anterior and posterior sides and including a central optic and extended portions spaced about and extending generally radially out from said optic and having inner ends joined to said optic and opposite outer ends movable anteriorly and posteriorly relative to said optic, and wherein,

said optic has anterior and posterior surfaces, and

said posterior surface of said optic is convexly curved to a substantially steeper convex curvature than said anterior surface and provides at least most of the optical power of said optic.

37. An accommodating intraocular lens according to Claim 36, wherein:

said extended portions have inner ends adjacent said optic, opposite outer ends, and hinges at the inner ends of said extended portions which accommodate pivotal movement of said extended portions anteriorly and posteriorly relative to said optic at said hinges.

38. An accommodating intraocular lens to be surgically implanted within a natural ocular capsular bag including an elastic posterior capsule urged anteriorly by vitreous pressure and an anterior capsule opening bounded by an anterior capsule rim which fuses by fibrosis to the posterior capsule during a postoperative healing period following surgery with the ciliary muscle paralyzed in its relaxed state, said lens comprising:

a lens body having normally anterior and posterior sides, a central optic having a posterior surface, and a plurality of extended portions extending generally radially out from the optic, each extended portion having an inner end connected to the optic, and an outer end remote from said inner end movable anteriorly and posteriorly relative to said inner end,

said lens adapted for insertion through said anterior capsule opening to an implanted position within said bag in which said

extended portions are situated between said rim and posterior capsule for fixation of the lens in the bag and posterior deflection of the lens against said posterior capsule by fibrosis of said rim to said posterior capsule during said healing period, and said extended portions adapted for rearward deflection of said optic under ciliary muscle relaxation to a posterior distant vision position in which the lens has a posterior distant vision configuration and for forward deflection of said optic under ciliary muscle contraction to a near vision position, resulting in consistent accommodation of the implanted lens under said contraction and relaxation of the ciliary muscle, and wherein

said posterior surface of said optic is convexly curved to a substantially steeper convex curvature than said anterior surface and provides at least most of the optical power of said optic.

39. An accommodating intraocular lens according to Claim 38, wherein:

said extended portions have inner ends adjacent said optic, opposite outer ends, and hinges at the inner ends of said extended portions which accommodate anterior and posterior pivotal movement of said extended portions at said hinges.

40. An accommodating intraocular lens for insertion through an opening in an anterior capsule of a natural ocular capsular bag for fixation adjacent to a posterior capsule of the capsular bag, said lens comprising:

a central optic portion having an anterior surface and a posterior surface,

a plurality of extended portions extending radially from the central optic portion, each extended portion having an inner end connected to the central optic portion and an outer end remote from the inner end, each extended portion adapted to permit the lens to fit within the opening formed in the anterior capsule and to permit fixation of the intraocular lens, said extended portions adapted to rearwardly deflect the central optic portion against the posterior capsule under ciliary muscle relaxation, to forwardly deflect the central optic portion under ciliary muscle constriction, and to bias the central optic portion against the posterior capsule during a substantial portion of its movement, resulting in consistent accommodation of the implanted lens with said constriction and relaxation of the ciliary muscle, and wherein

each extended haptic portion comprises one of the following: (a) a rotatably hinged extended portion, (b) a flexibly hinged extended portion, (c) a bendable extended portion.

41. A method of providing accommodating vision to a patient having a natural ocular capsular bag attached about its perimeter to the ciliary muscle of the eye and including an elastic posterior capsule urged anteriorly by vitreous pressure and an anterior capsule opening bounded circumferentially by an anterior capsule remnant which forms with said posterior capsule an annular cul-de-sac within and about the perimeter of said bag and which fuses by fibrosis to and is biased toward the posterior capsule during a postoperative healing period with said ciliary muscle paralyzed in its relaxed state, said method comprising the steps of:

selecting an accommodating intraocular lens comprising a lens body having normally anterior and posterior sides and including an optic having an optic axis and extended portions spaced circumferentially about and extending generally radially out from said optic and having inner ends joined to edge portions of said optic and opposite outer ends movable anteriorly and posteriorly relative to said optic,

implanting said lens within said capsular bag in a position wherein said optic is aligned with said anterior capsule opening and said extended portions are situated within said cul-de-sac between said anterior capsule remnant and said posterior capsule with said ciliary muscle paralyzed in its relaxed state,

maintaining said ciliary muscle in its relaxed state during said healing period to effect fixation of the lens within said bag by

fibrosis of said remnant to said posterior capsule and about said extended portions and posterior deflection of said lens against the posterior capsule by said remnant during fibrosis, and

said extended portions adapted for rearward deflection of said optic to said posterior distant vision position under ciliary muscle relaxation after said healing period and for forward deflection of said optic to a near vision position under ciliary muscle contraction after said healing period, resulting in consistent accommodation of the implanted lens under said contraction and relaxation of the ciliary muscle.

42. The method of Claim 41, wherein:

said extended portions comprise one of the following: (a) hinged extended portions whose inner ends are hinged to said optic for pivotal movement of the extended portions relative to said optic, (b) flexible extended portions which are bendable anteriorly and posteriorly relative to said optic.

43. The method of Claim 41, wherein:

said optic and said extended portions have posterior surfaces disposed in one of the following relationships relative to one another: (a) a relationship such that only said posterior surfaces of said extended portions contact said posterior capsule in said posterior distant vision position, (b) a relationship such that only said posterior surface of said optic contacts said posterior capsule in said posterior distant vision position, (c) a relationship such that said posterior surface of said optic and said posterior surfaces of said extended portions contact said posterior capsule in said posterior distant vision position.

44. An accommodating intraocular lens to be surgically implanted within a natural ocular capsular bag including an elastic posterior capsule urged anteriorly by vitreous pressure and an anterior capsule opening bounded by an anterior capsule rim which fuses by fibrosis to the posterior capsule during a post operative healing period following surgery with the ciliary muscle paralyzed in its relaxed state, said lens comprising:

a lens body having normally anterior and posterior sides and including an optic having an optic axis, and extended portions spaced apart about the optic,

each said extended portion including a haptic member extending

generally radially out from said optic and having an inner end joined to an edge portion of the optic and an opposite outer end, and a pair of resiliently flexible fixation fingers at the outer end of each haptic member and having normal unstressed positions in which the fingers extend laterally in opposite directions from the respective haptic member transversely of said optic,

said fingers being resiliently flexible and bendable from their normal unstressed configurations inwardly toward the optic to deflected positions wherein the fingers conform approximately to a common curvature, and

an enlarged protuberance at the outer end of at least one of said fixation fingers and defining an opening therein for improved fixation by fibrosis.

45. An accommodating intraocular lens according to Claim 44, wherein:

said lens is adapted for insertion through said anterior capsule opening to an implanted position within said bag in which said extended portions are situated between said rim and posterior capsule for fixation of the lens in the bag and posterior deflection of the lens against said posterior capsule by fibrosis of said rim to said posterior capsule during said healing period, and said extended portions adapted for rearward deflection of said optic under ciliary muscle relaxation to a posterior distant vision position in which the lens has a posterior distant vision configuration and for forward deflection of said optic under ciliary muscle contraction to a near vision position, resulting in consistent accommodation of the implanted lens under said contraction and relaxation of the ciliary muscle.

46. An accommodating intraocular lens according to Claim 44, wherein the flexible fixation fingers extend laterally edgewise from the outer end of the extended portions.

47. An accommodating intraocular lens according to Claim 44, wherein an enlarged protuberance defining an opening is disposed at the outer end of each of said fixation fingers.

48. An accommodating intraocular lens according to Claim 44, and further including a recessed pocket defined in at least one of said extended portions to receive a drug dispensed over a period of time.

49. An accommodating intraocular lens according to Claim 48, wherein said drug is Atropine.

50. An accommodating intraocular lens to be surgically implanted within a natural ocular capsular beg including an elastic posterior capsule urged anteriorly by vitreous pressure and an anterior capsule opening bounded by an anterior capsule rim which fuses by fibrosis to the posterior capsule during a post operative healing period following surgery with the ciliary muscle paralyzed in its relaxed state, said lens comprising:

a lens having a generally central optic and normally anterior and posterior sides,

two pairs of haptic extending portions extending generally oppositely from the optic,

a loop extending outwardly between the haptic extending portions of each pair, said loop having a portion generally transversely of

the haptics, and

an arm extending from said generally transverse portion of the loop and extending at an acute angle relative thereto, said arm having a protuberance at its outer end, said protuberance defining an opening,

said lens being adapted for insertion through said anterior capsule opening to an implanted position within said bag in which said extended portions are situated between said rim and posterior capsule for fixation of the lens in the bag and posterior deflection of the lens against said posterior capsule by fibrosis of said rim to said posterior capsule during a healing period, and said extended portions being adapted for rearward deflection of said optic under ciliary muscle relaxation to a posterior distant vision position in which the lens has a posterior distant vision configuration and for forward deflection of said optic under ciliary muscle contraction to a near vision position, resulting in consistent accommodation of the implanted lens under said contraction and relaxation of the ciliary muscle.

51. An accommodating intraocular lens according to Claim 50, wherein:

said loop has portions extending in generally parallel relation outwardly from the optic.

52. An accommodating intraocular lens according to Claim 50, wherein:

said haptic extending portions are in spaced relation about the optic and extend radially outwardly from the optic, and

said loops have radially extending portions extending radially from said haptic extending portions and arcuate generally transverse portions therebetween, and

said arms extend generally transversely at an acute angle to the generally transverse portion of the loop, and

said loops have protuberances at their ends defining openings.

Add B7

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